



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
[www.uspto.gov](http://www.uspto.gov)

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/787,132	02/27/2004	Denis Penninckx	Q80066	4663
23373	7590	07/02/2007	EXAMINER	
SUGHRUE MION, PLLC 2100 PENNSYLVANIA AVENUE, N.W. SUITE 800 WASHINGTON, DC 20037				LE, THI Q
ART UNIT		PAPER NUMBER		
2613				
MAIL DATE		DELIVERY MODE		
07/02/2007		PAPER		

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

SK

<b>Office Action Summary</b>	<b>Application No.</b>	<b>Applicant(s)</b>
	10/787,132	PENNINCKX ET AL.
	<b>Examiner</b> Thi Q. Le	<b>Art Unit</b> 2613

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) Responsive to communication(s) filed on 18 April 2007.
- 2a) This action is FINAL.                    2b) This action is non-final.
- 3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) Claim(s) 1-11 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) Claim(s) \_\_\_\_\_ is/are allowed.
- 6) Claim(s) 1-4 and 6-11 is/are rejected.
- 7) Claim(s) 5 is/are objected to.
- 8) Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) The specification is objected to by the Examiner.
- 10) The drawing(s) filed on 27 February 2004 is/are: a) accepted or b) objected to by the Examiner.  
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
  - a) All    b) Some \* c) None of:
  1. Certified copies of the priority documents have been received.
  2. Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- |  |  |
|--|--|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)<br>2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)<br>3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)<br>Paper No(s)/Mail Date _____. | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____.<br>5) <input type="checkbox"/> Notice of Informal Patent Application<br>6) <input type="checkbox"/> Other: _____. |
|--|--|

**DETAILED ACTION**

***Priority***

1. Acknowledgment is made of applicant's claim for foreign priority under 35 U.S.C. 119(a)-(d).

***Information Disclosure Statement***

2. The information disclosure statement (IDS) filed on 2/27/2004 was considered by the examiner.

***Claim Objections***

3. **Claim 8** is objected to because of the following informalities:

There is a discrepancy on the dependency of claim 8. Since, in the preliminary amendment, claim 8 has been changed to be dependent on only claim 1. With the latest amendment filed 4/18/2007, claim 8 is labeled as "original", but its dependency is changed to be dependent on any of claims 1 to 7. (Note, for the purpose of the rejection below claim 8 is assumed to be dependent on claim 1).

Appropriate correction is required.

***Claim Rejections - 35 USC § 112***

4. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

Art Unit: 2613

5. **Claims 1 and 9** rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the enablement requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention.

**Claims 1 and 9** includes added limitations that are not disclosed in the specification; "outputting a signal indicating the carrier frequency assigned to the signal to be transmitted", this limitation is not disclosed anywhere in the specification.

6. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

7. **Claims 1 and 9** are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

8. **Claim 1** recites the limitation "said N sets of frequencies" in lines 12-13. There is insufficient antecedent basis for this limitation in the claim. (note, "optical frequencies" was recited, not "frequencies")

9. **Claim 9** recites the limitation " said N sets of frequencies " in lines 13-14. There is insufficient antecedent basis for this limitation in the claim. (note, "optical frequencies" was recited, not "frequencies")

***Claim Rejections - 35 USC § 103***

10. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

11. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

12. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

13. **Claims 1, 8 and 9-11** are rejected under 35 U.S.C. 103(a) as being unpatentable over **Jukan et al. ("SERVICE SPECIFIC WAVELENGTH ALLOCATION IN QoS-ROUTED NETWORKS")** and in view of **Kawarai (US Patent # 7,046,930)** and further in view of **Taketomi (US PGPub 2002/0101635)**.

Consider **claim 1**, Jukan disclose, a method of assigning optical carrier frequencies to signals to be transmitted in an optical transmission network using wavelength division multiplexing, said frequencies belonging to a comb of optical frequencies (read as, Jukan

disclose method for wavelength allocation in a WDM QoS-Routed network; which includes a plurality of wavelengths for allocation; abstract), and one or more transmission constraint parameters being associated with any signal to be transmitted (read as, QoS requirements selected by the user; Jukan, Introduction), which method comprises: defining a measured signal transmission constraint level that is a function of said transmission constraint parameter(s) and takes N distinct values referred to as constraint values (read as, receiving user's QoS requirements, then associating different class of services with different QoS requirement selected by the user (i.e. S<sub>1</sub>, S<sub>2</sub>, S<sub>3</sub>); page 2271 right column paragraph 1, page 2273 left column paragraph 2); associating said N constraint values in increasing order respectively with said N sets of frequencies in decreasing order of the error rate values of the associated N ranges (Jukan disclosed 3 different services classes, S<sub>1</sub>, S<sub>2</sub>, S<sub>3</sub> (low, medium and high quality, respectively); it is implied that low quality service is associated with low quality wavelengths, medium quality service with medium quality wavelengths, and high quality of service with high quality wavelengths; since uniform quality degree is not guaranteed for all wavelength channels, therefore allocating a wavelength for a certain routing path, a certain quality is necessary “routed” with it; page 2270 right column paragraph 2, page 5 left column paragraph 2); assigning any signal to be transmitted a constraint value obtained by applying said measurement (read as, assigning wavelengths to different service classes; page 2273 left column paragraph 2); assigning said signal to be transmitted a carrier frequency belonging to one of said sets of frequencies that is associated with a constraint value at least equal to the constraint value assigned to said signal to be transmitted (read as, assigning wavelengths within specific service class to matching user selected QoS requirements, i.e. depending on the QoS requirement selected by the user, the

transmission is categorized in different service classes, which are associated with different quality of services and assigned different wavelengths; page 2272 left column paragraph 3 – right column paragraph 1, page 2273 left column paragraph 2). Jukan fails to disclose, the signals received after transmission in said network and carried by a given carrier frequency having a mean error rate that depends on said given carrier frequency; associating N sets of optical frequencies of the comb with N respective ranges of consecutive error rate values, each of said sets comprising frequencies generating a mean error rate in the associated range; and outputs a signal indicating the carrier frequency assigned to the signal to be transmitted.

In related art, Kawarai discloses, an optical communication system capable of performing efficient WDM transmission. Wherein, the signals received after transmission in said network and carried by a given carrier frequency having a mean error rate that depends on said given carrier frequency (read as, BER measurement unit measures BER of individual optical signal with different wavelength, then transmits BER information; abstract; figure 1, column 3 lines 16-28); associating N sets of optical frequencies of the comb with N respective ranges of consecutive error rate values (read as, BEF measurement unit 21 measures the BER of each WDM optical signal, for all wavelengths; then transmitting BER information to optical transmission device 10 for altering wavelength allocation for High QoS communication and Low QoS communication; figures 1 and 6, column 3 lines 16-28, column 4 lines 3-35, column 6 lines 4-10), each of said sets comprising frequencies generating a mean error rate in the associated range (Jukan disclosed separating groups of wavelength into different service classes, which is serves different QoS requirements selected by the user, and Kawarai disclosed measuring and

associated different BER for each individual wavelengths; thus it is obvious that for each group of wavelengths, there is a mean BER).

It would have been obvious for a person of ordinary skill in the art at the time of the invention to incorporate the teachings of Kawarai with Jukan. Since BER is critical when allocation user transmission with associated low, medium and high QoS communication. Thus, to enhance the network reliability, BER information is needed when allocating different types of service classes to different user selected QoS requirements.

In related art, Taketomi discloses a communication system perform WDM optical communication efficiently. Wherein, the network management device 20 outputs a signal indicating the carrier frequency assigned to the signal to be transmitted (read as, network managing device 20 has a setting information indicating means 21 for indicating setting information to set supervisory channels to the WDM device 10. The setting information includes wavelength information; wherein wavelength information comprises information indicative of a wavelength that is to be assigned to the second optical supervisory channel; figure 1, paragraphs 0031-0032).

It would have been obvious for a person of ordinary skill in the art at the time of the invention to incorporate the teachings of Taketomi with Jukan. Since indicating wavelength assigned to the signal to be transmitted makes it easier for the receiver end to identify and extra the signal after receiving.

Consider **claim 8, and as applied to claim 1 above**, Jukan modified by Kawarai and further modified by Taketomi, further disclose, an optical transmission network using wavelength distribution multiplexing to transmit signals carried by respective optical carrier

frequencies belonging to a comb of optical frequencies, which network includes processor means adapted to assign optical carrier frequencies to the signals to be transmitted by a method as claimed in claims 1 (Kawarai disclosed, an optical communication system capable of performing efficient WDM transmission. Wherein wavelength assignment unit 11, initially allocates wavelength to Low and High QoS communications; figure 1, column 4 lines 3-7).

Consider **claim 9**, it is rejected for the same reason as claim 1 above. Further, it is inherent that the methods in claims 1 are performed by some means (i.e. apparatus).

Consider **claim 10, and as applied to claim 1 above**, Jukan modified by Kawarai and further modified by Taketomi, further disclose, receiving a request including information relating to an optical signal to be transmitted; determining constraint parameters of the optical signal to be transmitted based on said information (read as, receiving user selected QoS requirements, then assigning wavelengths within specific service class to matching user selected QoS requirements, i.e. depending on the QoS requirement selected by the user, the transmission is categorize in different service classes, which are associated with different quality of services and assigned different wavelengths; page 2272 left column paragraph 3 – right column paragraph 1, page 2273 left column paragraph 2).

Consider **claim 11, and as applied to claim 9 above**, is rejected for the same reason as claim 10 above.

14. **Claims 2-4, and 7** are rejected under 35 U.S.C. 103(a) as being unpatentable over **Jukan et al. (“SERVICE SPECIFIC WAVELENGTH ALLOCATION IN QoS-ROUTED NETWORKS”)** and in view of **Kawarai (US Patent # 7,046,930)** and further in view of

**Taketomi (US PGPub 2002/0101635) and further in view of Aldred et al. (US Patent # 6,278,693).**

Consider **claim 2, and as applied to claim 1 above**, Jukan modified by Kawarai and further modified by Taketomi disclosed the invention as described above, except for, wherein one constraint parameter of a signal is a transmission distance that said signal must travel without benefit of individual regeneration.

The examiner takes office notice, that it is well known in the art, that transmission distance and regeneration are parameters of QoS requirements maybe be selected by the user. Since transmission distance and regeneration are related to latency and signal degrading (i.e. long distance transmission have high latency and signal degrading; and regeneration increases signal latency); thus when a user need to transmits signal with low latency, a path that is short and does not involves regeneration would provide the best low latency path. Further, Aldred discloses, typically quality of service parameters includes data transmission rate, latency, error rate, and so on; column 5 lines 51-60, column 8 lines 58-67.

It would have been obvious for a person of ordinary skill in the art at the time of the invention to incorporate the teachings of Aldred with Jukan modified by Kawarai and further modified by Taketomi. Since higher number quality of service parameters increase the network customizability for different customers; also it would increase the efficiency of wavelength allocation and routing.

Consider **claim 3, and as applied to claim 1 above**, Jukan modified by Kawarai and further modified by Taketomi and further modified by Aldred, further disclose, wherein one constraint parameter of a signal is a minimum transmission data rate of said signal (Aldred

discloses, typically quality of service parameters includes data transmission rate, latency, error rate, and so on; column 5 lines 51-60, column 8 lines 58-67).

Consider **claim 4, and as applied to claim 1 above**, Jukan modified by Kawarai and further modified by Taketomi and further modified by Aldred, further disclose, wherein one constraint parameter of a signal is a maximum error rate imposed on said signal as received after transmission (Aldred discloses, typically quality of service parameters includes data transmission rate, latency, error rate, and so on; column 5 lines 51-60, column 8 lines 58-67).

Consider **claim 7, and as applied to claim 1 above**, Jukan modified by Kawarai and further modified by Taketomi and further modified by Aldred, further disclose, wherein said measurement is obtained by means of an analytical function of said transmission constraint parameter(s) (Aldred disclose, a parameter may be expressed as an algebraic function of one or more other parameters; column 8 lines 17-22).

15. **Claim 6** is rejected under 35 U.S.C. 103(a) as being unpatentable over **Jukan et al.**

**(“SERVICE SPECIFIC WAVELENGTH ALLOCATION IN QoS-ROUTED NETWORKS”)** and in view of **Kawarai (US Patent # 7,046,930)** and further in view of **Taketomi (US PGPub 2002/0101635)** and further in view of **Kamani et al. (US PGPub 2004/0179515)**.

Consider **claim 6, and as applied to claim 1 above**, Jukan modified by Kawarai and further modified by Taketomi disclosed the invention as described above, except for, wherein said measurement is obtained by addressing a table as a function of said transmission constraint parameter(s).

In related art, Kamani discloses method and apparatus for providing a configurable quality of service threshold for voice over Internet protocol; wherein, a table of user defined QoS parameters is maintained by a switch (read as, said measurement is obtained by addressing a table as a function of said transmission constraint parameter(s); figure 1, paragraph 0030).

It would have been obvious for a person of ordinary skill in the art at the time of the invention to incorporate the teachings of Kamani with Jukan modified by Kawarai and further modified by Taketomi. Since, a table provides fast access and thus decreases latency in signal processing.

***Allowable Subject Matter***

16. **Claim 5** objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

***Conclusion***

11. Any response to this Office Action should be **faxed to (571) 273-8300 or mailed to:**

Commissioner for Patents  
P.O. Box 1450  
Alexandria, VA 22313-1450

**Hand-delivered responses** should be brought to

Customer Service Window  
Randolph Building  
401 Dulany Street  
Alexandria, VA 22314

Art Unit: 2613

12. Any inquiry concerning this communication or earlier communications from the Examiner should be directed to Thi Le whose telephone number is (571) 270-1104. The Examiner can normally be reached on Monday-Friday from 7:30am to 5:00pm.

If attempts to reach the Examiner by telephone are unsuccessful, the Examiner's supervisor, Kenneth Vanderpuye can be reached on (571) 272-3078. The fax phone number for the organization where this application or proceeding is assigned is (571) 273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free) or 703-305-3028.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist/customer service whose telephone number is (571) 272-2600.

*Thi Le*



KENNETH VANDERPUYE  
SUPERVISORY PATENT EXAMINER

Application/Control Number: 10/787,132

Art Unit: 2613

Page 13